

Response to Office Action Mailed November 19, 2007
S/N 10/810,154
Ban Kuan Koay, et al.
Atty Dkt: 70030659-1

REMARKS

Claims 1-9 were pending in the application prior to this response. Claim 3 has been amended herein. Claims 1, 2 and 4-9 remain in the application unchanged. New claims 10-18 have been added. Accordingly, after entry of the amendment presented herein, claims 1-18 will be pending. Re-examination and reconsideration are requested.

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I. Rejection of Claims 1, 4, 5 and 8 Under 35 U.S.C. §102(e)

Claims 1, 4, 5 and 8 stand rejected under 35 U.S.C. §102(e) as being anticipated by Rosenberg et al. (U.S. 2005/0009605). Reconsideration of the Examiner's rejection is respectfully requested.

Applicants' claim 1 recites the following:

A game controller comprising:

a moveable element having an optically readable pattern on a surface thereof, said moveable element moving relative to a fixed position and having a position characterized by a relative position of said moveable element relative to said fixed position;

an imaging element that forms an image of a sub-area on said surface, said sub-area being determined by said relative position of said moveable element relative to said fixed position;

a memory for storing a map that specifies said readable pattern in each sub-area on said surface that can be imaged by said imaging element; and

a controller for comparing said image to said map to determine said relative position of said moveable element.

(bold emphasis added)

Applicants respectfully assert that the Rosenberg et al. reference does not disclose all of the limitations of claim 1. Claim 1 recites, for example:

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a memory for storing a map that specifies said readable pattern in each sub-area on said surface that can be imaged by said imaging element; and

a controller for comparing said image to said map to determine said relative position of said moveable element.

The Examiner states the following in Paragraph 3 (pages 2-3) of the Office action:

Regarding claim 1: Rosenberg '605 discloses ... a memory for storing a map that specifies said readable pattern in each sub-area on said surface that can be imaged by said imaging element (paragraph [0018], U.S. Pat. No. 5,644,139 (abstract) which is incorporated by reference), and a controller (movement detector 56) (Fig. 4) for comparing said image to said map to determine said position of said moveable element (paragraph [0025]).

Applicants respectfully disagree with the Examiner's assertion that Rosenberg et al. discloses "a memory for storing a map that specifies said readable pattern in each sub-area on said surface that can be imaged by said imaging element". The Examiner points to paragraph [0018] of Rosenberg et al. in support of this assertion. This portion of the reference is reproduced as follows:

[0018] Movement detector 18 is not limited to any particular hardware or software configuration, but rather it may be implemented in any computing or processing environment, including in digital electronic circuitry or in computer hardware, firmware, or software. In one implementation, movement detector 18 includes a digital signal processor. These features may be, for example, inherent to the reference surface, relief patterns embossed on the reference surface, or marking patterns printed on the reference surface. **Movement detector 18 detects movement of the reference surface 14 based on comparisons between images of the reference surface 14 that are captured by imager 16.** In

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particular, movement detector 18 identifies texture or other features in the images and **tracks the motion of such features across multiple images**. Movement detector 18 **identifies common features in sequential images and determines the direction and distance by which the identified common features are shifted or displaced**. In some implementations, movement detector 18 correlates features identified in successive images to **compare the positions of the features in successive images** to provide information relating to the position of the reference surface 14 relative to imager 16. Movement detector 18 **translates the displacement information into two-dimensional position coordinates (e.g., X and Y coordinates) that correspond to the movement of reference surface 14**. Additional details relating to the image processing and correlating methods performed by movement detector 18 are found in U.S. Pat. Nos. 5,578,813, 5,644,139, 5,703,353, 5,729,008, 5,769,384, 5,825,044, 5,900,625, 6,005,681, 6,037,643, 6,049,338, 6,249,360, 6,259,826, and 6,233,368, each of which is incorporated herein by reference.

(bold emphasis added)

As can be appreciated, with reference, for example, to the text highlighted above, Rosenberg et al. tracks movement in the more or less conventional manner of comparing successively-acquired images to determine the position of one image relative to the other and, thus, to determine the relative speed and direction of movement that occurred during the time interval between acquisition of the two images. Rosenberg et al. does not disclose "**a memory for storing a map that specifies said readable pattern in each sub-area on said surface that can be imaged by said imaging element**" as recited in applicants' claim 1.

The Examiner also points to the abstract of U.S. Patent No. 5,644,139 (which is incorporated by reference in the Rosenberg et al. patent). The abstract of U.S. Patent No. 5,644,139 is reproduced as follows:

Abstract

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A scanning device and method for forming a scanned electronic image include using navigation information that is acquired along with image data, and then rectifying the image data based upon the navigation and image information. The navigation information is obtained in frames. **The differences between consecutive frames are detected and accumulated, and this accumulated displacement value is representative of a position of the scanning device relative to a reference.** The image data is then positioned-tagged using the position data obtained from the accumulated displacement value. To avoid the accumulation of errors, the accumulated displacement value obtained from consecutive frames is updated by comparing a current frame with a much earlier frame stored in memory and using the resulting difference as the displacement from the earlier frame. These larger displacement steps are then accumulated to determine the relative position of the scanning device.

(Allen et al.; U.S. Patent No. 5,644,139; abstract; emphasis added)

Allen et al. discloses a scanning device that stitches together portions of an acquired image. To determine position, Allen et al. discloses analyzing consecutive image frames in a manner somewhat similar to that of Rosenberg et al., as discussed above. Allen et al. also, however, discusses a way to reduce accumulated error by comparing the current frame with an earlier frame that is stored in memory. Allen et al. does not, however, disclose **"a memory for storing a map that specifies said readable pattern in each sub-area on said surface that can be imaged by said imaging element"** as recited in applicants' claim 1. It is noted that Allen et al. is concerned with scanned data (e.g., a document). As such, it would not be possible to store a map of readable patterns for each sub-area since, in the Allen et al. device, the imaged sub areas would be on the object being scanned (e.g., a document) and, thus, would be different for each object scanned.

Applicants' claim 1 further recites the following:

a controller for comparing said image to said map to determine said

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relative position of said moveable element.

As discussed above, neither Rosenberg et al. nor Allen et al. disclose comparing an image to a map stored in memory; instead, in each reference, only relative movement between successive images is analyzed.

Since Rosenberg et al. does not disclose all of the limitations of claim 1, claim 1 is not anticipated by Rosenberg et al. The standard for lack of novelty, that is, for "anticipation," under 35 U.S.C. §102 is one of strict identity. To anticipate a claim for a patent, a single prior source must contain all its essential elements. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81, 90 (Fed. Cir. 1986).

For at least the reasons advanced above, applicant respectfully asserts that the Examiner's rejection is improper and that claim 1 is in condition for allowance. Claims 4, 5 and 8 are allowable at least as depending from allowable base claim 1.

II. Rejection of Claim 2 Under 35 U.S.C. §103(a)

Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Rosenberg et al. (U.S. 2005/009605) in view of Chen et al. (U.S. Patent Application Publication No. 2003/0020690). Reconsideration of the Examiner's rejection is respectfully requested.

Claim 2 is allowable at least as depending from allowable base claim 1.

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III. Rejection of Claims 3 and 6 Under 35 U.S.C. §103(a)

Claims 3 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Rosenberg et al. (U.S. 2005/009605) in view of Liebenow (U.S. Patent No. 6,078,312). Reconsideration of the Examiner's rejection is respectfully requested.

Claims 3 and 6 are allowable at least as ultimately depending from allowable base claim 1.

It is noted that a minor amendment to claim 3 is presented herein in order to improve antecedent basis.

IV. Rejection of Claim 7 Under 35 U.S.C. §103(a)

Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Rosenberg et al. (U.S. 2005/009605). Reconsideration of the Examiner's rejection is respectfully requested.

Claim 7 is allowable at least as ultimately depending from allowable base claim 1.

V. Rejection of Claim 9 Under 35 U.S.C. §103(a)

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Rosenberg et al. (U.S. 2005/009605) in view of Drake (U.S. Patent No. 7,046,229). Reconsideration of the Examiner's rejection is respectfully requested.

Claim 9 is allowable at least as depending from allowable base claim 1.

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VI. New Claims 10-18

New independent claim 10 and new dependent claims 11-18 have been added herein. New claims 10-18 are fully supported by the application as originally-filed. No new matter has been added.

New claim 10 is fully supported by the originally-filed application with reference, for example, to drawing Fig. 1, paragraph [0010] of the written specification and originally-filed claim 1. New claims 11-18 are similar to originally-filed claims 2-9, respectively.

Independent claim 10 recites, for example, the following:

a memory storing a map that specifies images corresponding to each sub-area of said surface; and

a controller capable of comparing an image acquired by said imaging device to said map to determine the relative positions of said surface and said imaging device.

Accordingly, claim 10 is allowable over the references of record for at least the same reasons as generally advanced above, with respect to the rejection of claim 1. New claims 11-18 are allowable at least as ultimately depending from allowable base claim 10.

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For at least the foregoing reasons, applicant respectfully asserts that all of the pending claims are in condition for allowance.

Respectfully submitted,
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